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CLAIMS

What is claimed is:

1        1. A pallet assembly for assembling a fiber optic  
2 module that includes a housing, comprising:

3        a pallet; and,

4        a cartridge that is attached to said pallet and  
5 supports the fiber optic module housing.

1        2. The assembly of claim 1, further comprising a  
2 ferrule arm coupled to said cartridge.

1        3. The assembly of claim 1, further comprising a clip  
2 arm coupled to said cartridge.

1        4. The assembly of claim 1, further comprising a  
2 swing arm that pushes the fiber optic module housing into a  
3 stop of said cartridge.

1        5. The assembly of claim 4, wherein said stop has a  
2 tapered surface.

1        6.    The assembly of claim 1, further comprising a  
2 fiber connector shuttle that is adapted to hold a fiber  
3 optic cable connector and move relative to said pallet.

1        7.    The assembly of claim 1, wherein said pallet  
2 includes a fiber optic cable channel.

1        8.    The assembly of claim 1, wherein said pallet  
2 includes a fiber optic cable pocket.

1        9.    The assembly of claim 8, wherein said pallet  
2 includes a cover that can enclose said fiber optic cable  
3 pocket.

1        10.   A pallet assembly for assembling a fiber optic  
2 module that includes a housing, a ferrule and a clip,  
3 comprising:

4        a pallet; and,

5        cartridge means for coupling the fiber optic module  
6 housing to said pallet.

1        11.   The assembly of claim 10, further comprising  
2 ferrule means for securing the ferrule.

1        12. The assembly of claim 10, further comprising clip  
2 means for securing the clip.

1        13. The assembly of claim 10, further comprising  
2 biasing means for biasing the fiber optic module housing  
3 into a stop of said cartridge means.

1        14. The assembly of claim 13, wherein said stop has a  
2 tapered surface.

1        15. The assembly of claim 10, further comprising  
2 shuttle means for allowing movement of a fiber optic cable  
3 connector relative to said pallet.

1        16. The assembly of claim 10, wherein said pallet  
2 includes a fiber optic cable channel.

1        17. The assembly of claim 10, wherein said pallet  
2 includes a fiber optic cable pocket.

1        18. The assembly of claim 17, wherein said pallet  
2 includes a cover that can enclose said fiber optic cable  
3 pocket.

1        19. A method for loading a fiber optic module housing  
2 onto a pallet assembly, comprising:

3        loading a fiber optic module onto a cartridge; and,  
4        attaching the cartridge to a pallet.

1        20. The method of claim 19, further comprising  
2        securing a clip and a ferrule.

1        21. The method of claim 19, further comprising placing  
2 a fiber optic cable connector onto a shuttle.

1        22. A pallet assembly for assembling a fiber optic  
2 module that includes a housing, a ferrule and a clip,  
3 comprising:

4        a pallet that supports the housing;

5        a ferrule arm that is attached to said pallet and  
6 secures the ferrule; and,

7        a clip arm that is attached to said pallet and secures  
8 the clip.

1        23. The assembly of claim 22, further comprising a  
2 cartridge that supports the housing and is attached to said  
3 pallet.

1        24. The assembly of claim 23, further comprising a  
2 swing arm that pushes the fiber optic module housing into a  
3 stop of said cartridge.

1        25. The assembly of claim 24, wherein said stop and  
2 swing arm have angled contact surfaces.

1        26. The assembly of claim 22, further comprising a  
2 connector shuttle that is adapted to hold a fiber optic  
3 cable connector and move relative to said pallet.

1        27. The assembly of claim 22, wherein said pallet  
2 includes a fiber optic cable channel.

1        28. The assembly of claim 22, wherein said pallet  
2 includes a fiber optic cable pocket.

1        29. The assembly of claim 28, wherein said pallet  
2 includes a cover that can enclose said fiber optic cable  
3 pocket.

1        30. A pallet assembly for assembling a fiber optic  
2 module that includes a housing, a ferrule and a clip,  
3 comprising:

4        a pallet that supports the housing;

5        ferrule means for securing the ferrule; and,

6        clip means for securing the clip.

1        31. The assembly of claim 30, further comprising  
2 cartridge means for coupling the housing to said pallet.

1        32. The assembly of claim 31, further comprising bias  
2 means for biasing the fiber optic module housing into a  
3 stop of said cartridge means.

1        33. The assembly of claim 32, wherein said stop has an  
2 angled contact surface.

1        34. The assembly of claim 30, further comprising  
2 shuttle means for allowing movement of a fiber optic cable  
3 connector relative to said pallet.

1        35. The assembly of claim 30, wherein said pallet  
2 includes a fiber optic cable channel.

1        36. The assembly of claim 30, wherein said pallet  
2 includes a fiber optic cable pocket.

1        37. The assembly of claim 36, wherein said pallet  
2 includes a cover that can enclose said fiber optic cable  
3 pocket.

1        38. A method for loading components of a fiber optic  
2 module onto a pallet assembly housing, comprising:

3        loading a housing onto a pallet;

4        securing a ferrule; and,

5        securing a clip.

1        39. The method of claim 38, further comprising placing  
2 a fiber optic cable connector onto a shuttle.



1        40. A pallet assembly for assembling a fiber optic  
2 module that includes a housing, comprising:

3        a pallet; and,

4        a cartridge that is attached to said pallet and  
5 supports the housing, said cartridge having a stop; and,  
6        a swing arm that is mounted to said pallet.

1        41. The assembly of claim 40, wherein said stop and  
2 swing arm have angled contact surfaces.

1        42. The assembly of claim 40, further comprising a  
2 connector shuttle that is adapted to hold a fiber optic  
3 cable connector and move relative to said pallet.

1        43. The assembly of claim 40, wherein said pallet  
2 includes a fiber optic cable channel.

1        44. The assembly of claim 40, wherein said pallet  
2 includes a fiber optic cable pocket.

1        45. The assembly of claim 44, wherein said pallet  
2 includes a cover that can enclose said fiber optic cable  
3 pocket.

1        46. A pallet assembly for assembling a fiber optic  
2 module that includes a housing, comprising:  
3        a pallet;  
4        a cartridge that is attached to said pallet and  
5 supports the housing, said cartridge having a stop; and,  
6        bias means for pushing the housing into said stop.

1        47. The assembly of claim 46, wherein said stop and  
2 said bias means have angled contact surfaces.

1        48. The assembly of claim 46, further comprising  
2 shuttle means for allowing movement of a fiber optic cable  
3 connector relative to said pallet.

1        49. The assembly of claim 46, wherein said pallet  
2 includes a fiber optic cable channel.

1        50. The assembly of claim 46, wherein said pallet  
2 includes a fiber optic cable pocket.

1        51. The assembly of claim 50, wherein said pallet  
2 includes a cover that can enclose said fiber optic cable  
3 pocket.

1        52. A method for loading a fiber optic module housing  
2 onto a pallet assembly, comprising:

3        loading a fiber optic module onto a pallet wherein the  
4 fiber optic module housing is pushed into a stop.

1        53. The method of claim 52, further comprising placing  
2 a fiber optic cable connector onto a shuttle.

1        54. A pallet assembly for assembling a fiber optic  
2 module that includes a housing, comprising:

3        a pallet that supports a housing, said pallet having a  
4 fiber optic cable pocket.

1        55. The assembly of claim 54, further comprising a  
2 connector shuttle that is adapted to hold a fiber optic  
3 cable connector and move relative to said pallet.

1        56. The assembly of claim 54, wherein said pallet  
2 includes a fiber optic cable channel.

1        57. The assembly of claim 54, wherein said pallet  
2 includes a cover that can enclose said fiber optic cable  
3 pocket.

1        58. A pallet assembly for assembling a fiber optic  
2 module with a fiber optic cable, comprising:  
3        a pallet having means for restraining a coiled portion  
4 of a fiber optic cable.

1        59. The assembly of claim 58, further comprising  
2 shuttle means for allowing movement of a fiber optic cable  
3 connector relative to said pallet.

1        60. The assembly of claim 58, wherein said pallet  
2 includes a fiber optic cable channel.

1        61. The assembly of claim 58, wherein said means  
2 includes a fiber optic cable pocket.

1        62. The assembly of claim 61, wherein said means  
2 includes a cover that can enclose said fiber optic cable  
3 pocket.

4        63. A method for loading a fiber optic module housing  
5 onto a pallet assembly, comprising:  
6        loading a fiber optic module onto a pallet; and,

7       placing a fiber optic cable into a pocket of the  
8       pallet.

1       64. The method of claim 63, further comprising placing  
2       a fiber optic cable connector onto a shuttle.

1       65. A pallet assembly for assembling a fiber optic  
2       module, comprising:

3       a pallet that supports a housing, said pallet having a  
4       fiber optic cable channel.

1       66. The assembly of claim 65, further comprising a  
2       connector shuttle that is adapted to hold a fiber optic  
3       cable connector and move relative to said pallet.

1       67. A pallet assembly for assembling a fiber optic  
2       module with a fiber optic cable, comprising:

3       a pallet having means for restraining a straight  
4       portion of a fiber optic cable.

1       68. The assembly of claim 67, further comprising  
2       shuttle means for allowing movement of a fiber optic cable  
3       connector relative to said pallet.

1        69. A method for loading a fiber optic module housing  
2 onto a pallet assembly, comprising:  
3        loading a fiber optic module onto a pallet; and,  
4        placing a fiber optic cable into a channel of the  
5 pallet.

1        70. The method of claim 69, further comprising placing  
2 a fiber optic cable connector onto a shuttle.

1        71. A pallet assembly for assembling a fiber optic  
2 module with a fiber optic cable that terminates with a  
3 connector, comprising:  
4        a pallet that supports a housing; and,  
5        a shuttle that can move relative to said pallet and  
6 supports the connector.

1        72. A pallet assembly for assembling a fiber optic  
2 module with a fiber optic cable that terminates with a  
3 connector, comprising:  
4        a pallet having shuttle means for allowing movement of  
5 the connector.

1        73. A method for loading a fiber optic module housing  
2 onto a pallet assembly, comprising:  
3        loading a fiber optic module onto a pallet; and,  
4        placing a fiber optic cable connector onto a shuttle  
5 that is coupled to the pallet.

1        74. A pallet loader station for coupling a fiber optic  
2 cable and a ferrule to a fiber optic module housing,  
3 comprising:  
4        a pallet station;  
5        a rail located adjacent to said pallet station;  
6        a fiber guide tray that has a tapered channel; and,  
7        a gripper coupled to said rail and located adjacent to  
8 said fiber guide tray.

1        75. The station of claim 74, further comprising a  
2 rotating wheel coupled to said gripper.

1        76. The station of claim 74, further comprising an  
2 actuator coupled to said fiber guide tray.

1        77. The station of claim 74, further comprising a  
2 safety switch coupled to said gripper.

1        78. The station of claim 77, further comprising a  
2 sensor that enables said safety switch when said gripper is  
3 in a home position.

1        79. A pallet loader station for coupling a fiber optic  
2 cable and a ferrule to a fiber optic module housing,  
3 comprising:

4        a pallet station;

5        gripper means for gripping the ferrule;

6        tray means for aligning the ferrule with said gripper  
7 means; and,

8        movement means for moving the gripper means to said  
9 pallet station.

1        80. The station of claim 79, further comprising  
2 rotating means for rotating the ferrule within said pallet  
3 station.



1        81. The station of claim 79, further comprising  
2 actuator means for moving said tray means between an up  
3 position and a down position.

1        82. The station of claim 79, further comprising safety  
2 means for controlling actuation of said movement means.

1        83. A method for coupling a ferrule, attached to a  
2 fiber optic cable, to a fiber optic module housing located  
3 within a pallet station, comprising:

4        pulling the ferrule through a guide channel of a guide  
5 tray;

6        gripping the ferrule; and,

7        moving the ferrule into the pallet station to be  
8 coupled to the fiber optic module housing.

1        84. The method of claim 83, further comprising moving  
2 a rotating wheel into engagement with the gripped ferrule,  
3 and rotating the wheel and spinning the ferrule when the  
4 ferrule is in the pallet station.

1        85. The method of claim 83, further comprising  
2        deactivating a safety switch before moving the ferrule into  
3        the pallet station.

1        86. The method of claim 83, further comprising moving  
2        the guide tray to a down position before moving the gripped  
3        ferrule into the pallet station.

1        87. A docking station for a pallet assembly that  
2        supports a fiber optic module which has a housing, a  
3        ferrule and a clip, the pallet assembly having a shuttle  
4        that supports a fiber optic cable connector, the housing  
5        having a plurality of electrical leads, comprising:  
6        an optical detector; and,  
7        an actuator that moves the shuttle toward said optical  
8        detector.

1        88. The station of claim 87, further comprising an  
2        electrical connector assembly that engages the leads of the  
3        housing.

1        89. The station of claim 88, wherein said electrical  
2 connector assembly includes a plurality of spring biases  
3 balls.

1        90. The station of claim 87, further comprising an  
2 inductive bar that heats a portion of the housing.

1        91. A docking station for a pallet assembly that  
2 supports a fiber optic module which has a housing, a  
3 ferrule and a clip, the pallet assembly having a shuttle  
4 that supports a fiber optic cable connector, the housing  
5 having a plurality of electrical leads, comprising:

6        an optical detector; and,

7        actuator means for moving the shuttle toward said  
8 optical detector.

1        92. The station of claim 91, further comprising  
2 connector means for coupling to all of the leads of the  
3 housing.

1        93. The station of claim 92, wherein said electrical  
2 connector means includes a plurality of spring biases  
3 balls.

1        94. The station of claim 91, further comprising an  
2 inductive bar that heats a portion of the housing.

1        95. A method for docking a pallet assembly that  
2 supports a fiber optic module which has a housing, a  
3 ferrule and a clip, the pallet assembly having a shuttle  
4 that supports a fiber optic cable connector, the housing  
5 having a plurality of electrical leads, comprising:  
6        moving the shuttle toward an optical detector.

1        96. A docking station for a pallet assembly that  
2 supports a fiber optic module which has a housing, a  
3 ferrule and a clip, the pallet assembly having a shuttle  
4 that supports a fiber optic cable connector, the housing  
5 having a plurality of electrical leads, comprising:  
6        an electrical connector assembly that engages all of  
7 the leads of the housing.

1        97. The station of claim 96, wherein said electrical  
2 connector assembly includes a plurality of spring biases  
3 balls.

1        98. The station of claim 96, further comprising an  
2 inductive bar that heats a portion of the housing.

1        99. A docking station for a pallet assembly that  
2 supports a fiber optic module which has a housing, a  
3 ferrule and a clip, the pallet assembly having a shuttle  
4 that supports a fiber optic cable connector, the housing  
5 having a plurality of electrical leads, comprising:

6        means for electrically coupling to all of the leads of  
7 the housing.

1        100. The station of claim 99, wherein said means  
2 includes a plurality of spring biases balls.

1        101. The station of claim 99, further comprising an  
2 inductive bar that heats a portion of the housing.

1        102. A method for docking a pallet assembly that  
2 supports a fiber optic module which has a housing, a

3 ferrule and a clip, the pallet assembly having a shuttle  
4 that supports a fiber optic cable connector, the housing  
5 having a plurality of electrical leads, comprising:  
6 coupling all of the leads of the housing to a tester  
7 circuit.